Protected Bikeway Update to the Minneapolis Bicycle Master Plan

June 23, 2015

Minneapolis
City of Lakes

What is a protected bikeway?

A protected bikeway is a bicycle facility that is physically separated from motor vehicle traffic. Off-street trails are the most common type of protected bikeway; however, protected bikeways may also be located within street corridors and separated from traffic lanes through parked cars, curbs, medians, bollards/flexible traffic posts, planters or other vertical feature. Protected bikeways are not the only tool in Minneapolis' bikeway toolbox. Other bikeway facility types include bike lanes, shared lanes and bike boulevards.

Why do we need protected bikeways?

Minneapolis is a great city for bicycling. The bicycle network has been expanded significantly in recent years, and a lot of people are biking. However, not everyone feels comfortable and safe riding on a busy street, even with a bike lane. There are some parts of the city where potential bicycling demand is high, but where low-stress bikeway facilities such as trails, bike boulevards, and lower-traffic streets are not an option. To continue to grow bicycling in Minneapolis, we need to make more of the city easier to bike for more people.

Why do we need to update the plan?

The current Minneapolis Bicycle Master Plan, adopted in 2011, addresses a broad range of bikeway facility types, including off-street trails, bike boulevards, bike lanes, and shared lanes, but it does not specifically address on-street protected bikeways. The City of Minneapolis also approved a Climate Action Plan in 2013 recommending implementation of 30 miles of on-street protected bike facilities by 2020.

What is the scope of the plan update?

This plan update identifies priority locations for near-term implementation of protected bikeways in Minneapolis. The plan update focuses on near-term priorities, not a long-term vision, for protected bikeways. The majority of recommended protected bikeways are located in downtown or connecting to downtown where bicycle demand is high and there are few low-stress bikeway options, such as trails, bike boulevards, or quiet residential streets. This plan update does not address non-protected bikeways in the existing 2011 Bicycle Master Plan.

Credit: People for Bikes

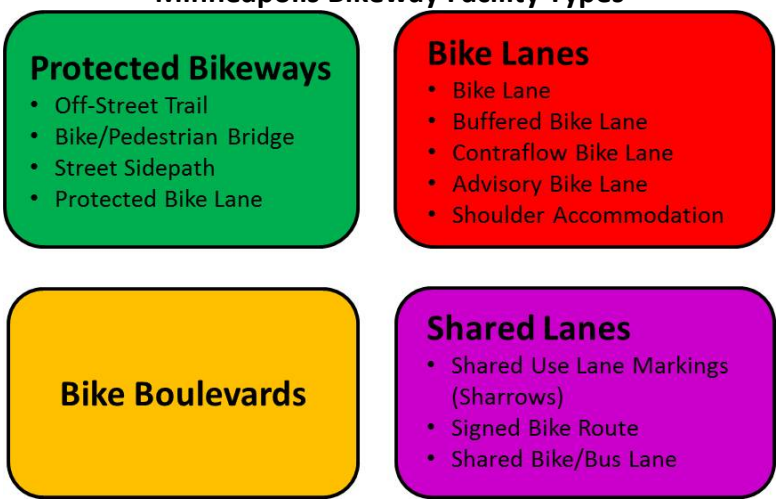
Protected bikeways can extend the experience of biking on a trail to busy city destinations where low-stress bikeway options like trails, bike boulevards, or low-traffic streets aren't an option.

Minneapolis Bikeway Network Development

Bikeway Type	Centerline Miles by Year				
	1997	2010	2014	This Plan	Long-Term*
Protected Bikeways	62	89	96	144	174
Bike Lanes	19	44	82	50	104
Shared Lanes	1	5	15	11	74
Bike Boulevards			20	20	44
To Be Determined				6	6
Total	**82**	**138**	**213**	**232**	**403**

** Based on existing network, this plan, 2011 Bicycle Master Plan, and other recent planning activities.*

Minneapolis Bikeway Facility Types



Protected bikeways are one of four categories of bikeways used in Minneapolis.

Examples of Protected Bikeways

Protected bikeways may be one-way or two-way facilities. In street corridors, they may be at street-level (inside the curb) or at sidewalk level (behind the curb). Here are a few examples of protected bikeways in Minneapolis and other cities.

Midtown Greenway, Minneapolis

Loring Bikeway, Minneapolis

Plymouth Avenue Bridge over the Mississippi River, Minneapolis

Credit: The Green Lane Project

New York City

Vancouver

Credit: Chicago Tribune

Chicago

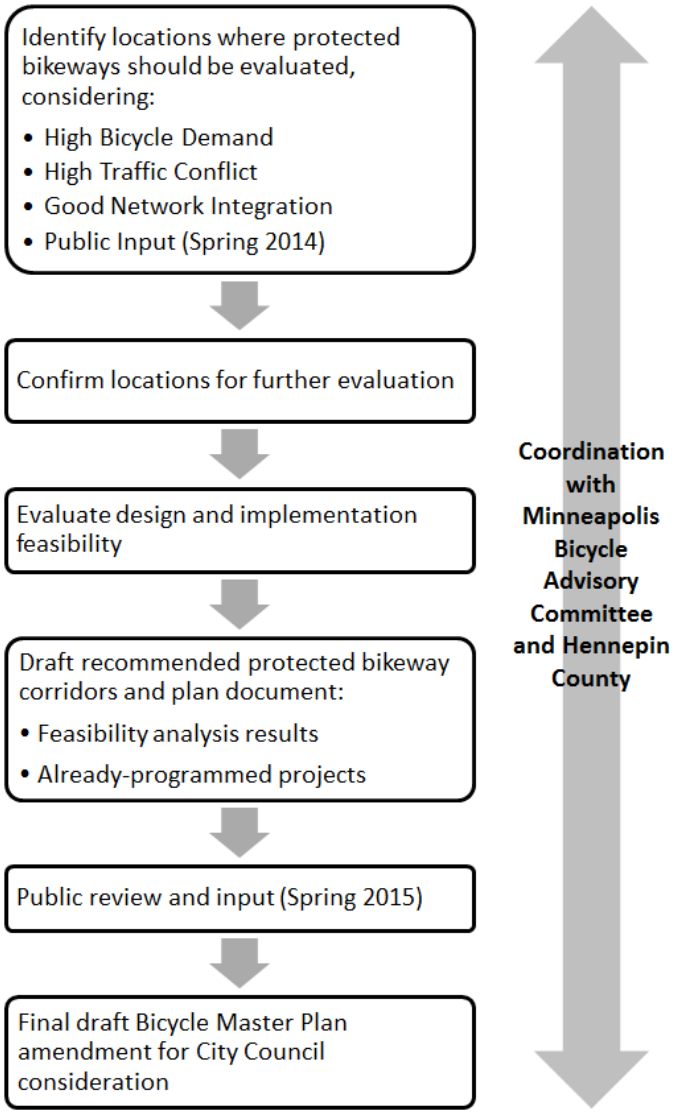
Evaluation and Engagement Process

The draft plan update is the result of a year-long planning process, beginning with a public open house and online survey in spring 2014 that sought input on locations where protected bikeways are most needed.

City staff used the public input to identify locations where protected bikeways should be evaluated, while also considering areas with high bicycle demand, high traffic conflict and good network integration. Staff worked with the Bicycle Advisory Committee to identify 19 corridors for further evaluation.

17 of the identified 19 corridors were further evaluated by a team of Minneapolis Public Works and Hennepin County staff. The feasibility of implementing protected bikeways was difficult to determine in some segments due to challenging tradeoffs with existing curb-side uses. This includes significant portions of two downtown corridors (Hennepin Ave S/1st Ave N and 5th/6th Streets S); these segments are identified as bikeway facility type "to be determined." The appendix contains the results of this feasibility analysis, including a preliminary design concept for each corridor. The appendix also includes cost estimates based on a protected bikeway design with flexible delineator posts. Costs could be higher based on different design scenarios.

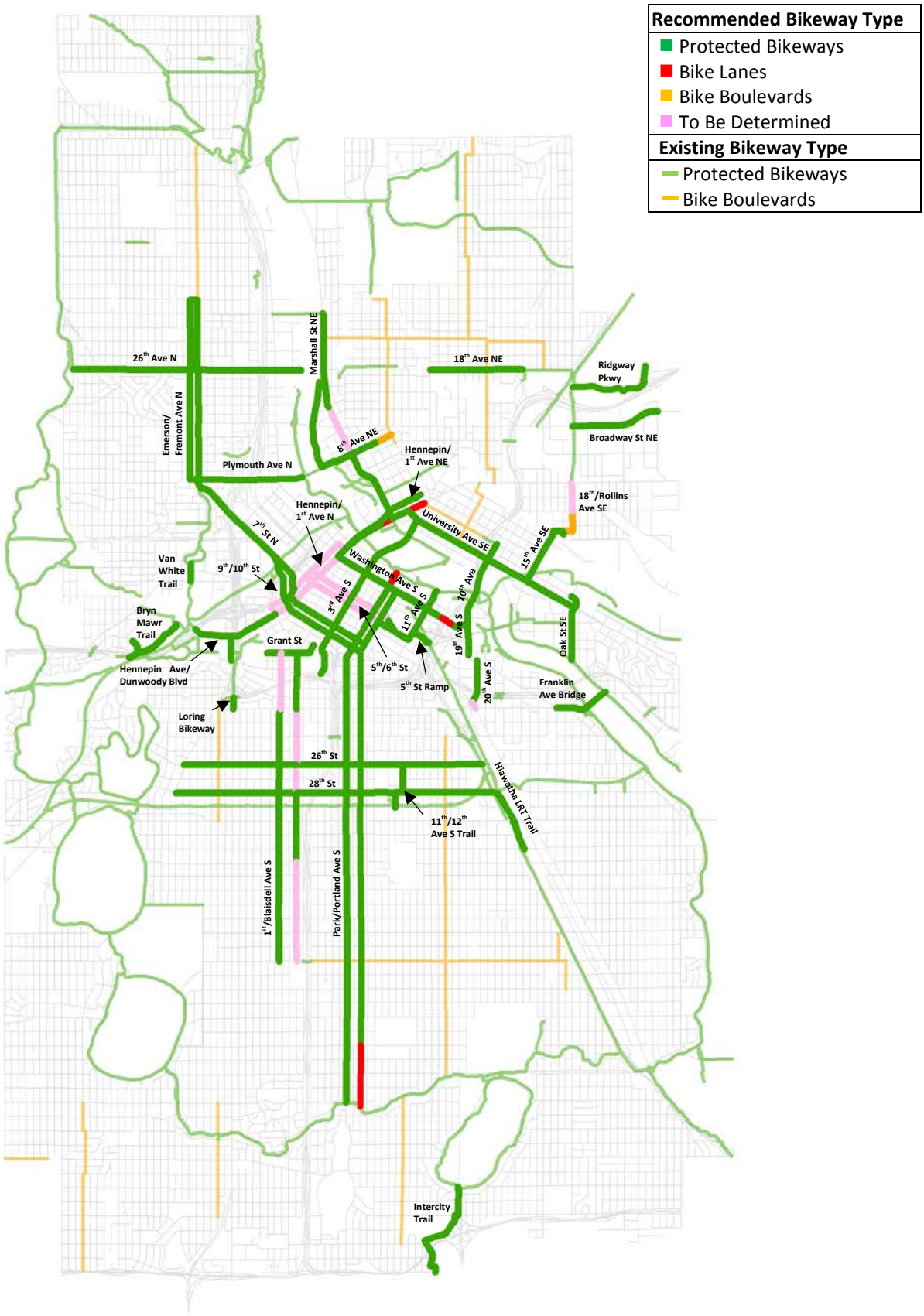
The recommended near-term protected bikeway projects in this plan update include the results of this planning process as well as protected bikeways that were already programmed for implementation in 2015 or later.



Similar to the current Minneapolis Bicycle Master Plan, it is important to note that this plan update is guidance for the design process. Community input and technical factors may result in a different design. As opportunities to implement protected bikeways arise, engagement plans will be developed for each project based on the context of the corridor, including type of opportunity (e.g. street resurfacing, street reconstruction), level of technical challenges and the range of stakeholders.

The draft plan was reviewed by the Bicycle Advisory Committee, as well as staff from Hennepin County, MnDOT, MPRB, and Metro Transit prior to being released for public review and comment in spring 2015.

Figure 2: Priority Protected Bikeways with Existing Protected Bikeways and Bike Boulevards



Priority Near-Term Protected Bikeway Projects

Tables 1-3 and Figures 2-5 show the corridors recommended for near-term protected bikeway implementation with the intent of meeting or exceeding the Climate Action Plan's goal of 30 miles of on-street protected bicycle facilities by 2020. These corridors total more than 50 miles, including over 30 miles on corridors where there is an existing bicycle facility. A significant focus of this plan update is to upgrade the quality of existing bicycle facilities in busy traffic corridors where there alternative low-stress routes are limited.

The costs shown are high-level estimates and will require further refinement. The low end of the cost range represents the estimated cost of removal and installation of all pavement markings, signs, delineators, traffic control, mobilization and construction elements, while the high end of the cost range represents estimated additional costs of traffic signals and pavement seal coating, which may not be necessary for all projects; both figures include a 25% contingency. Cost estimates for projects that are already funded are not included.

An approximate phasing is shown in three tiers relative to the complexity of project delivery, funding opportunities, and coordination with other infrastructure projects. This phasing is intended to be flexible and used as an implementation guide, not a strict program of projects.

- Tier 1 includes 15 miles of corridors, including 7 miles with no existing bicycle facility. These projects are the nearest-term opportunities for implementation of protected bikeways, and many are already funded. Between $2.4 million and $3.0 million in additional funds will be needed to implement these projects, excluding projects that are already funded. See Table 1 and Figure 2.

- Tier 2 includes 28 miles of corridors, including 9 miles with no existing bicycle facility. These projects are either more complex to implement or have funding identified in later years than the Tier 1 projects. Between $4.2 million and $7.8 million in additional funds will be needed to implement these projects, excluding projects that are already funded. See Table 2 and Figure 3.

- Tier 3 includes 11 miles of corridors, primarily with existing bicycle facilities. These projects are either lower priority or require further evaluation to determine feasibility. See Table 3 and Figure 4.

In addition to these corridors, several corridors were evaluated for protected bikeway feasibility and are recommended for shared lanes, standard bike lanes or buffered bike lanes, instead of protected bike lanes. See Table 4 and Figure 6.The existing network, recommended protected bikeway projects, existing with recommended protected bikeway projects, and long-term network maps are shown in Figures 6-8.

Minneapolis Bikeway Network Development – Centerline Miles

Bikeway Type	Network Development to Date			Existing Network with Protected Bikeways in this Plan (Tables 1-3)			Long-Term Network*
	1997	2010	2014	Tier 1	Tier 2	Tier 3	
Protected Bikeways	62	89	96	110	135	144	174
Bike Lanes	19	44	82	76	59	50	104
Shared Lanes	1	5	15	13	13	13	74
Bike Boulevards			20	20	20	20	44
To Be Determined					2	6	6
Total	**82**	**138**	**213**	**219**	**229**	**232**	**403**

** Based on the existing network, Tables 1-4 in this plan update, the 2011 Bicycle Master Plan, and other recent planning activities.*

Protected Bikeways Not Identified In Plan

The Protected Bikeway Plan sets priorities for where the City will spend time and resources for at least the next 5-10 years. Narrative was added to clarify that this plan does not preclude protected bikeways on streets not specifically identified in the plan update. Other corridors will be considered and re-examined when other major implementation changes to the infrastructure would result or are pending (e.g. street reconstruction, etc.). Transportation projects will be evaluated based on a variety of perspectives and will include protected bikeways if it determined to be the best treatment based on community engagement, context of the roadway, and surrounding land uses.

Project Selection/Criteria

The City will consider a variety of criteria when implementing protected bikeways, including the following:

Transportation Criteria

- High bicycle demand
- High traffic conflict
- Good network integration

Equity Criteria

- Racial/ethnic populations (census data)
- Economic (Areas of Concentrated Poverty and Racially Concentrated Areas of Poverty)

Other Considerations

- Routes identified in the overall Bicycle Master Plan
- Street reconstruction projects already programmed
- Linkages to other projects (e.g. Hennepin County and Mn/DOT)
- Projects must be definable – termini make sense, project can't be too small or inefficient
- Other unique circumstances

Routes That Are "To Be Determined"

There are several projects that are labeled "to be determined" because more evaluation is required before a positive recommendation for a protected bikeway can be made. The Appendix: Protected Bikeways Feasibility Analysis provides conceptual designs for the corridors, including reasons why some segments of protected bikeways are not likely feasible. These projects will be further evaluated by City staff as projects are incorporated into the capital budget process.

Table 1: Tier 1 Protected Bikeway Implementation Opportunities

ID	Location	Mileage & Directions	Estimated Unfunded Cost in $1000s*	Implementation Considerations
2B	Franklin (29th Ave S to Seabury Ave S)	0.3 (2-way)	$110-185	Resurfaced in 2011; coordinate with #23 river bridge and future 29th Ave bike boulevard
12B	Oak St SE (E River Pkwy to Washington Ave SE)	0.3 (2-way)	$45-110	Seal coated in 2014
16A	Plymouth Ave N / 8th St NE (Fremont to 5th St NE)	1.9 (2-way)	$320-570	5-block segment west of Lyndale Ave to be resurfaced in 2018; small segment of bike blvd on eastern end
18A	3rd Ave S (Washington Ave to University Ave SE)	0.7 (2-way)	$200-375	Coordinate with #18B 3rd Ave S and MnDOT bridge rehabilitation (2020-2021)
18B	3rd Ave S (16th St E to Washington Ave S)	1.0 (2-way)	$1,580	Requires removal of center medians and left turn lanes; 2016 seal coating candidate
20A	26th & 28th St (Portland to Hiawatha)	2.5 (1-way)	partially funded ($160 needed)	2015 resurfacing project (City)
21	26th Ave N (Wirth Pkwy to River)	2.0 (2-way)	funded	2015-16 project (City)
22	Washington Ave S (Hennepin to 5th Av S)	0.4 (2-way)	funded	2015 project (County)
23	Franklin Ave (river crossing)	0.2 (2-way)	funded	2015 project (County)
24	Intercity Trail	1.0 (2-way)	funded	2015 project (Three Rivers/City/MPRB)
25	Broadway St NE (Stinson Blvd NE to Industrial Blvd NE)	0.8 (2-way)	funded	2015 project; potential 2018-19 reconstruction (federal application submitted)
31	Mississippi River East Bank Trail	0.9 (2-way)	funded	2015 project (Park Board)
32	5th/6th Street Trails (Vikings Stadium)	0.4 (1 & 2-way)	funded	Vikings Stadium project
33	Ridgway Parkway Trail	0.8 (2-way)	funded	2015 project (Park Board)
34	Bryn Mawr Trail	0.7 (2-way)	funded	2015 project (Park Board)
	Total Tier 1	**14 miles**	**$2.4-3.0 million**	

Low end of cost range excludes the cost of seal coating and signal improvements, which may not be necessary for all projects.

Figure 2: Tier 1 Protected Bikeway Implementation Opportunities

Bikeway Type	Existing Mileage	Recommended Mileage
Protected Bikeways	<1	15
Bike Lanes	6	
Shared Lanes	2	
Bike Boulevards		<1
To Be Determined		
Total	**8**	**14**

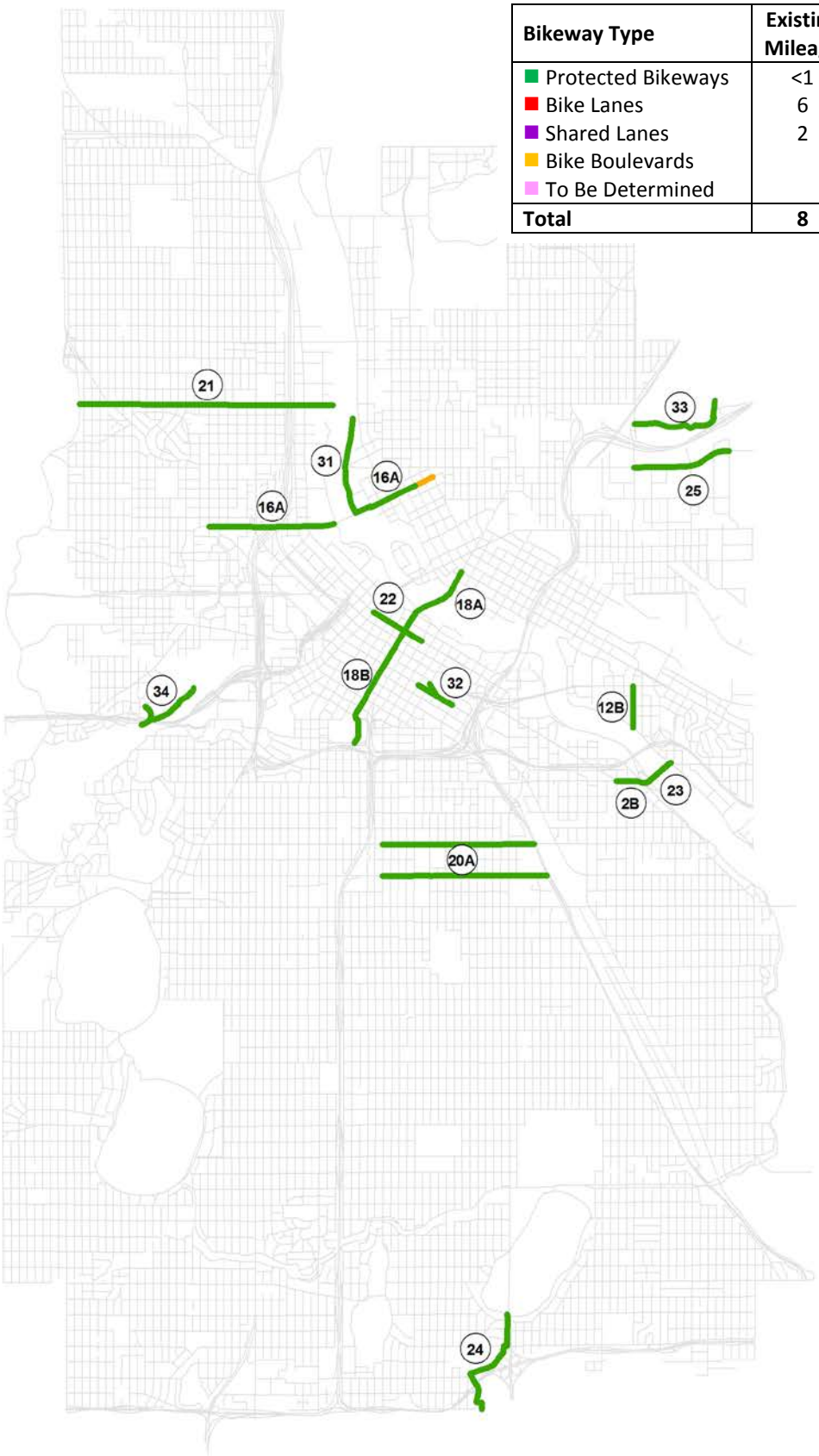


Table 2: Tier 2 Protected Bikeway Implementation Opportunities

ID	Location	Mileage & Directions	Estimated Unfunded Cost in $1000s*	Implementation Considerations
6A/ 5D	Hennepin/1st Ave NE (Washington Ave to 5th St NE)	1.7 (1 and 2-way)	$550-740	Coordinate with NE Traffic Study and Nicollet-Central Modern Streetcar
5A	Dunwoody Blvd Trail (Van White Blvd to Hennepin Ave)	0.4 (2-way)	$310-315	Coordinate with SWLRT sidewalk improvements (2018-2019)
5B	Hennepin Ave (Maple St to 12th St)	0.3 (2-way)	$20	Coordinate with #5A Dunwoody Blvd Trail
7A	Grant St (Willow St to 2nd Ave S)	0.5 (2-way)	$90-140	Coordinate with #7B Marquette/2nd & #9A 1st/Blaisdell
8B	Park/Portland (West River Pkwy to Franklin)	2.5 (1-way)	$365-910	Standard bike lanes north of Washington Ave S
9A	1st/Blaisdell Ave S (Grant St to 40th St)	5.4 (1-way)	$550-1,400	Several segments need further evaluation to determine whether a protected bikeway is feasible. 1st Ave S (Lake to 12th) is a 2017 resurfacing project; coordinate with Nicollet-Central Modern Streetcar
10B	11th Ave S (6th St S to West River Pkwy)	0.5 (2-way)	$95-165	Implement after 5th St I-94 is relocated to 7th St in 2016
11A	7th St N (Plymouth Ave to 1st Ave N)	1.7 (2-way)	funded	SWLRT project (2018-2019)
11B	10th St S (1st Ave N to Park Ave S)	0.8 (1-way)	$195-420	Coordinate with #11C; seal coated in 2012/13
11C	9th St S (1st Av N to Park Ave S)	0.9 (1-way)	$145-350	2015 resurfacing project (City)
12A	University Ave SE (1st Ave NE to Oak St SE)	1.8 (2-way)	$585-920	MnDOT street resurfacing (Central Ave to I-35W) 2018-19
12C	Oak St SE (Washington Ave to Walnut St)	0.3 (2-way)	$300-375	Complex multimodal intersection
13A-C	15th Ave SE to NE Diagonal (University Ave SE to Hennepin Ave E)	1.1 (2-way)	$475-665	Potential 2018-19 implementation (federal application submitted "U of M Protected Bikeways"); northern two blocks require further evaluation for a protected bikeway
14 A-B	10th Ave SE/19th Ave SE/20th Ave S (5th St SE to Riverside Ave)	1.5 (2-way)	$275-490	Potential 2018-19 implementation (federal application submitted "U of M Protected Bikeways"); coordinate with 10th Ave Bridge rehabilitation
15	Emerson/Fremont Ave N (Plymouth to 33rd Ave N) – 1-way on Emerson and Fremont or 2-way on Emerson	3.2 (1-way) or 1.6 (2-way)	$270-685 (1-way) or $175-395 (2-way)	Potential 2018-19 implementation (federal application submitted); coordinate with arterial BRT (2018-19) and Emerson Ave resurfacing (Plymouth to West Broadway - 2017)
17B	Marshall St NE (14th to Lowry)	0.8 (2-way)	$90-215	Coordinate with East Bank Trail projects; cost estimate assumes protected bikeway within existing curb lines; off-street trail would cost more. Evaluate potential extension to 27th Ave NE or St Anthony Pkwy
20B	26th & 28th St (Hennepin to Portland)	2.9 (1-way)	TBD	Coordinate with reconstruction of I-35W bridges (2017-2019)
27	Van White Blvd Trail Gap	0.2 (2-way)	funded	SWLRT project (2018-2019)
28	18th Ave NE (Monroe St NE to Ulysses St NE)	0.8 (2-way)	funded	2018 project (City)
29	Hiawatha Trail Gap	0.6 (2-way)	funded	2018 project (City)
30	5th St S/I-94 Ramp (Hiawatha Trail to 11th Ave S)	0.4 (2-way)	funded	2017-2018 project (City)
35	11th Ave S/12th Ave S (Midtown Greenway to 28th St E)	0.3 (2-way)	funded	2017-2018 Safe Routes to School Project at Andersen School (City)
	Total Tier 2	**29 miles**	**$4.2-7.8 million**	

Low end of cost range excludes the cost of seal coating and signal improvements, which may not be necessary for all projects.

Figure 3: Tier 2 Protected Bikeway Implementation Opportunities

Bikeway Type	Existing Mileage	Recommended Mileage
Protected Bikeways		24
Bike Lanes	18	<1
Shared Lanes	1	
Bike Boulevards		<1
To Be Determined		2
Total	**19**	**28**

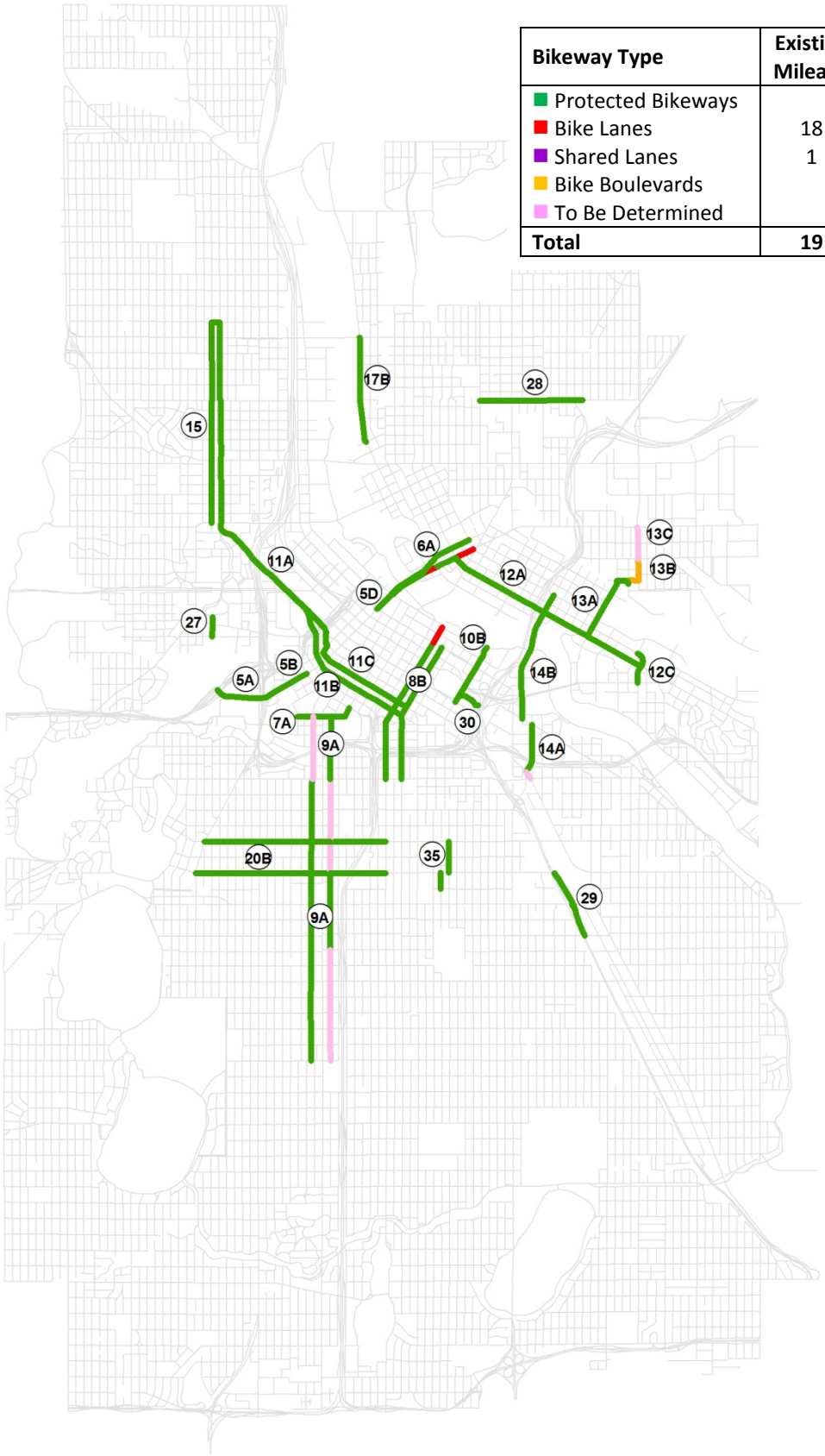


Table 3: Tier 3 Protected Bikeway Implementation Opportunities

ID	Location	Mileage & Directions	Estimated Unfunded Cost in $1000s*	Implementation Considerations
4A	Lyndale Ave S (Franklin Ave to Loring Greenway Bridge)	0.1 (2-way)	$935-1,060	Need to determine logical connection at southern end.
4B	Sculpture Garden Sidepath (Dunwoody to Vineland)	0.2 (2-way)	$60	Scope of Hennepin/Lyndale project and Sculpture Garden projects (2015-16) do not include installation of a new trail; pinch point at footings of pedestrian bridge.
8A/8C	Park and Portland (Minnehaha Parkway to Franklin)	7.0 (1-way)	$725-1,845	Buffered bike lanes recently installed. Lower priority than #8B.
17A	Main/Marshall (Hennepin to 14th Ave NE)	1.2 (2-way)	$165-385	Existing bike lanes; parallel river trail. Lower priority than #17B.
5C or 5E	1st Ave N or Hennepin Ave S (12th to Washington)	0.9 (2-way)	TBD	Existing protected bike lanes on 1st Ave N have lower use than shared bike/traffic lanes on Hennepin Ave S. Further feasibility evaluation needed. Protected bike lanes on Hennepin Ave S would require extensive street reconstruction. Removal of protected bike lanes on 1st Ave N could support future street narrowing and sidewalk widening.
10A & 10C	5th and/or 6th St S (Hennepin to Chicago)	1.6 (1-way)	TBD	Important east-west connection through downtown; further feasibility evaluation needed
19A	Washington Ave (5th Ave S to 19th Ave S)	0.9 (2-way)	$245-525	Coordinate with #22 Washington reconstruction/cycletrack; a bike lane is currently proposed for 2015 installation; protected bikeway not feasible on I-35W bridge without widening
	Total Tier 3	**12 miles**	**TBD**	

Low end of cost range excludes the cost of seal coating and signal improvements, which may not be necessary for all projects.

Table 4: Corridors Evaluated and Recommended for Non-Protected Bikeways

ID	Location	Evaluation Conclusions
1A	24th St (Hennepin Ave to Hiawatha Ave)	Standard bike lanes are feasible and appropriate for the lower-volume traffic conditions on 24th St. Maintain existing bike lanes east of I-35W and add bike lanes west of I-35W (may require parking removal or some shared lane segments).
1B	Franklin Ave (Hennepin Ave to Bloomington Ave)	Protected bike lanes are not feasible. Standard bike lanes are recommended, consistent with the 2011 Bicycle Master Plan. Further evaluation will be needed.
2A	Franklin Ave E (Bloomington to 20th)	A buffered bike lane is recommended. Protected bike lanes are feasible in the existing condition; however, additional parking is planned along the median in conjunction with a pedestrian plaza recently constructed.
2C	Franklin Ave (20th Ave S to 29th Ave S)	Maintain existing bike lanes and on-street parking.
3A	Franklin Ave SE (East River Pkwy to Emerald St SE)	Standard bike lanes are recommended. Street is too narrow for a protected bikeway, even with parking removal.
4C	Hennepin Ave S (Oak Grove to Maple St)	Northbound buffered bike lane will be added in conjunction with 2015-16 Hennepin/Lyndale project. Parallel trail through Loring Park.
6B	5th St NE (Hennepin Ave to 3rd Ave NE)	Maintain/improve existing bike lanes.
7B	Marquette/2nd Ave S (1st Ave S to Washington)	Protected bike lanes are not feasible. Protected bikeway planned for #18B 3rd Ave S, where there is higher bicycle demand and greater network connectivity.
12D	4th St SE (1st Ave NE to Walnut St SE)	Maintain and fill gaps in existing bike lane. Two-way protected bikeway planned for #12A University Ave SE.
13D	15th Ave SE/Como Ave SE (Rollins Ave SE to 18th Ave SE)	Maintain existing bike lanes. Alternative route to #13B.

Figure 4: Tier 3 Protected Bikeway Implementation Opportunities

Bikeway Type	Existing Mileage	Recommended Mileage
Protected Bikeways	<1	9
Bike Lanes	9	<1
Shared Lanes	<1	
Bike Boulevards		
To Be Determined		4
Total	**10**	**13**

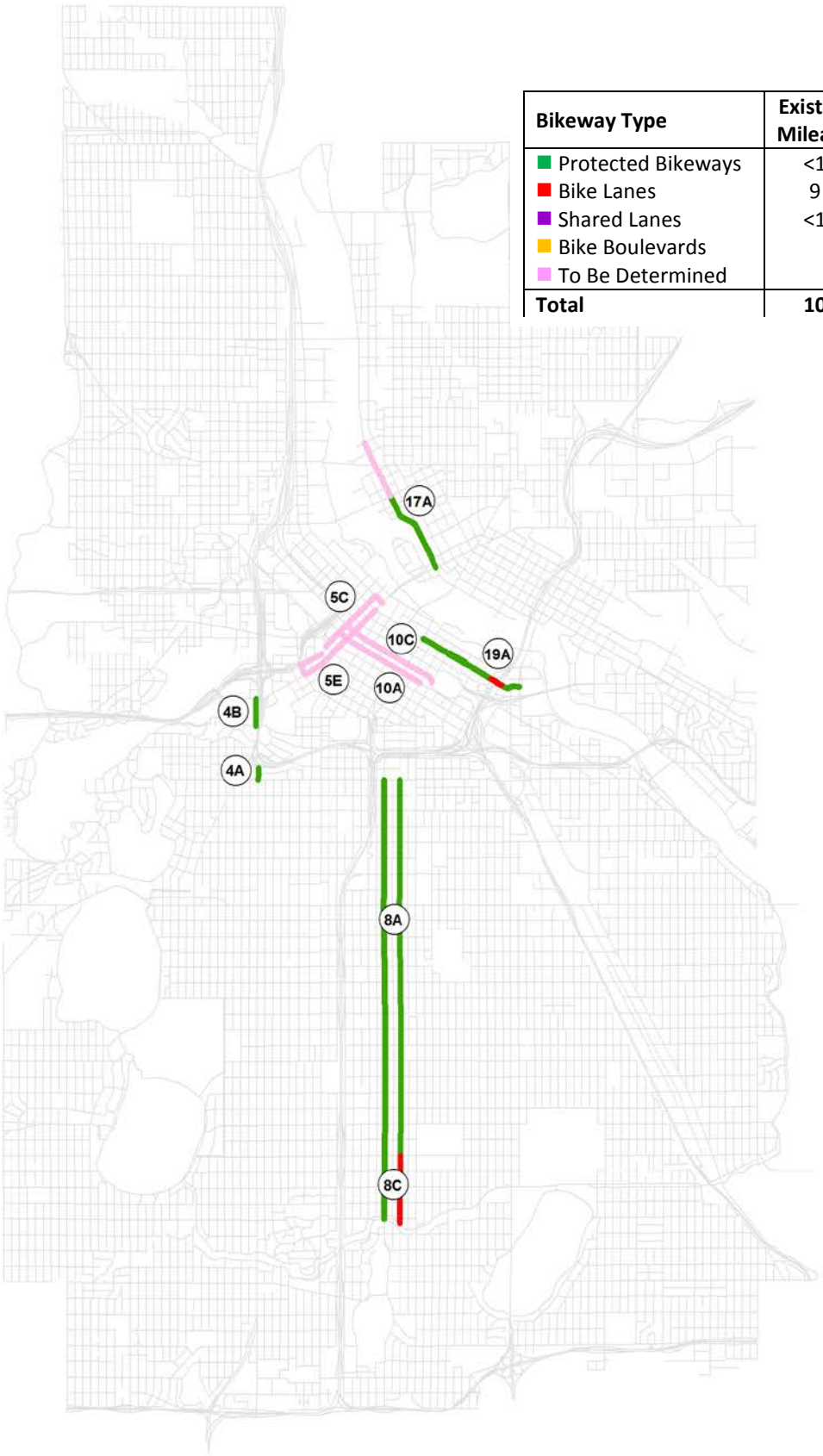


Figure 5: Recommended Near-Term Protected Bikeway Projects (Tiers 1-3)

Bikeway Type	Existing Mileage	Recommended Mileage
Protected Bikeways	1	48
Bike Lanes	33	1
Shared Lanes	3	
Bike Boulevards		
To Be Determined		6
Total	**37**	**55**

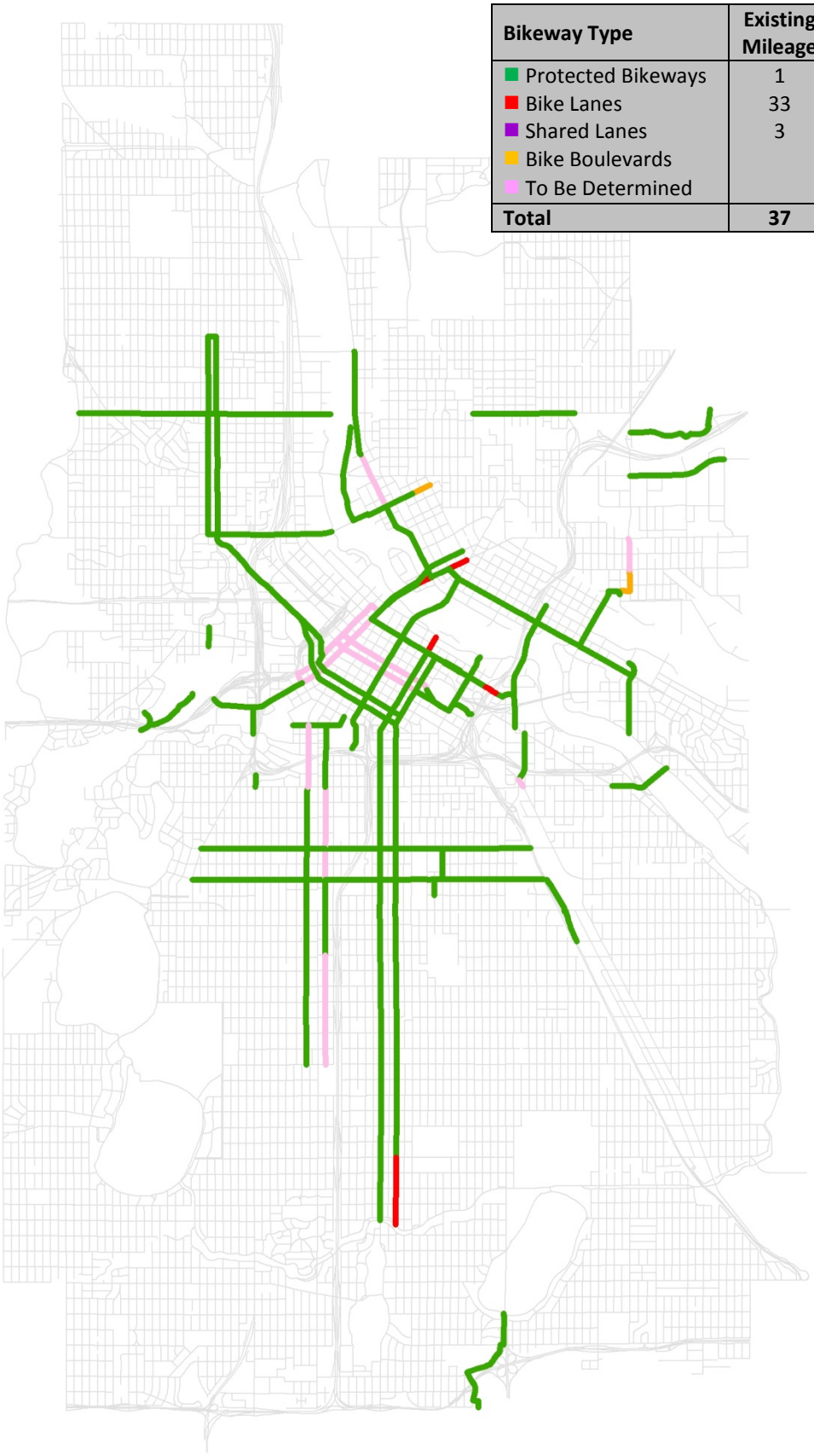
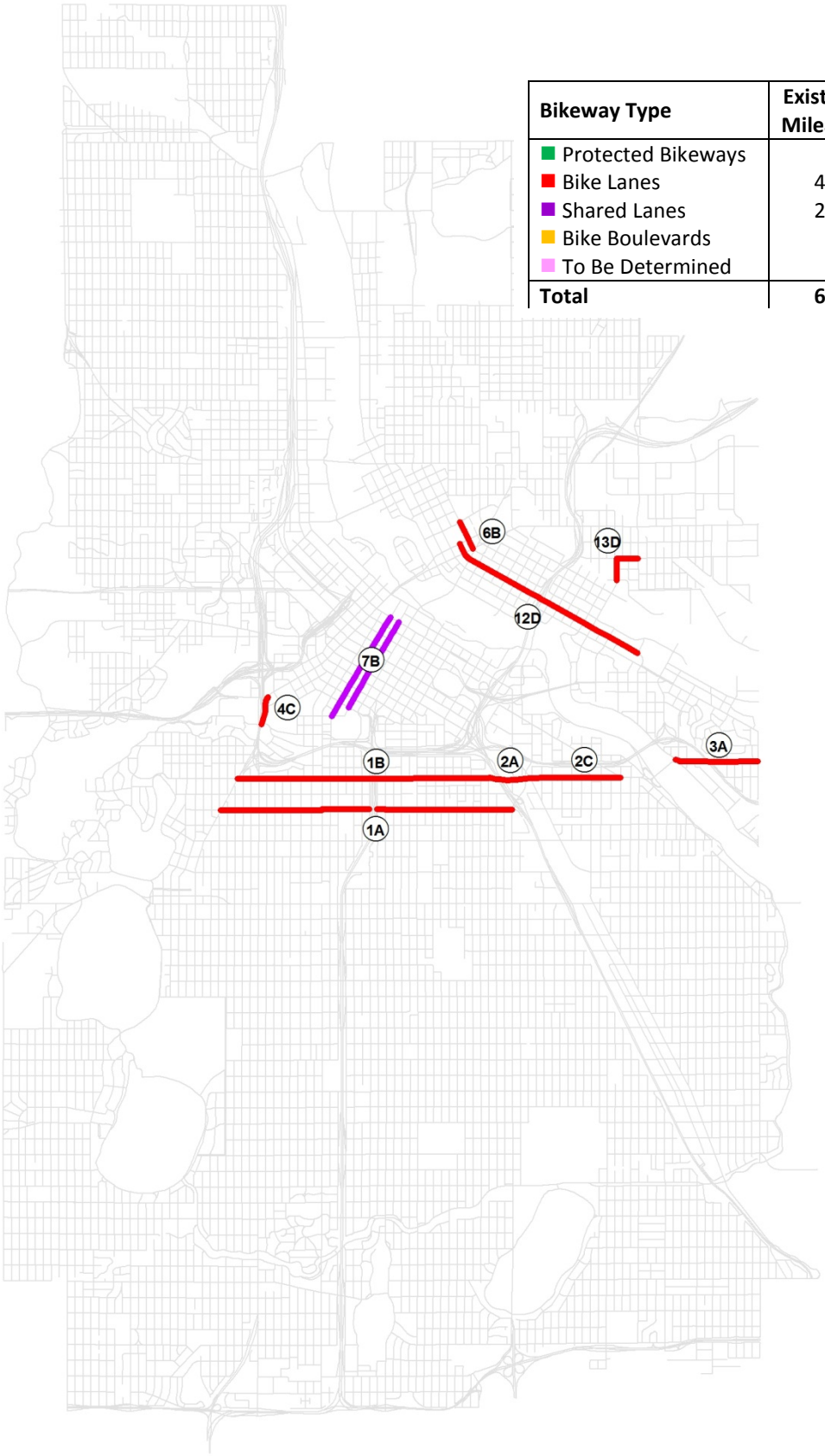


Figure 6: Corridors Evaluated and Recommended for Non-Protected Bikeways

Bikeway Type	Existing Mileage	Recommended Mileage
Protected Bikeways		
Bike Lanes	4	8
Shared Lanes	2	2
Bike Boulevards		
To Be Determined		
Total	**6**	10



Maintenance Considerations

Maintenance of the entire transportation system in Minneapolis is important so that people can safely and comfortably move around the City regardless of how they choose to do so, including people that walk, bicycle, take transit, and drive an automobile. Maintenance considerations are very important as protected bikeway projects become more prevalent in Minneapolis. Ensuring year round use of these facilities is dependent upon adequate funding.

In recent years, the bikeway network has been expanded significantly from 82 miles in 1997 to 213 miles in 2014 with virtually no increase in annual maintenance budgets. In order to successfully implement protected bikeways in Minneapolis, additional maintenance resources will be needed. Not only is the bikeway network mileage recommended for expansion, but protected bikeways cost more to maintain than existing maintenance practices for bike lanes.

Based on the experience of the City of Minneapolis' Transportation Maintenance and Repair Division in maintaining the existing bikeway network, the average costs to maintain different types of bikeways are shown in Table 5, and the estimated maintenance costs of the protected bikeways recommended in this plan are shown in Table 6.

Public Works staff will continue to research, monitor, and evaluate best practices in maintaining infrastructure year-round. Maintaining protected bikeways, particularly protected bike lanes, is a relatively new responsibility in Minneapolis. The sample size is fairly small based on limited experience with 1st Avenue N protected bike lanes. The unit costs for protected bikeways are based on this limited experience. It is anticipated that as the protected bikeway network grows, there will be economies of scale to be gained; however, these are difficult to forecast with limited experience and are not assumed in these estimates. These estimates do not account for the costs of maintaining the existing system, nor do they account for the incremental change in costs between the existing system, enhanced maintenance of the existing system, and the recommended protected bikeway projects. These are conservative estimates based upon the best information available today and will need to be refined as the City of Minneapolis gains more experience with maintaining protected bikeways.

Table 5: Average Bikeway Maintenance Unit Costs

Bikeway Facility Type	Maintenance Practice	Annual Cost per Linear Foot
Trail	Clear Snow & Sweep Weekly	$2.00/LF
Bike lane with enhanced sweeping (per direction)	Clear Snow & Sweep Weekly	$1.00/LF
Bike lane with enhanced year-round maintenance (per direction)	Remove Snow & Sweep Weekly	$3.75/LF
One-way protected bike lane (per direction)	Remove Snow & Sweep Weekly	$6.50/LF
Two-way protected bike lane on one side	Remove Snow & Sweep Weekly	$10.00/LF

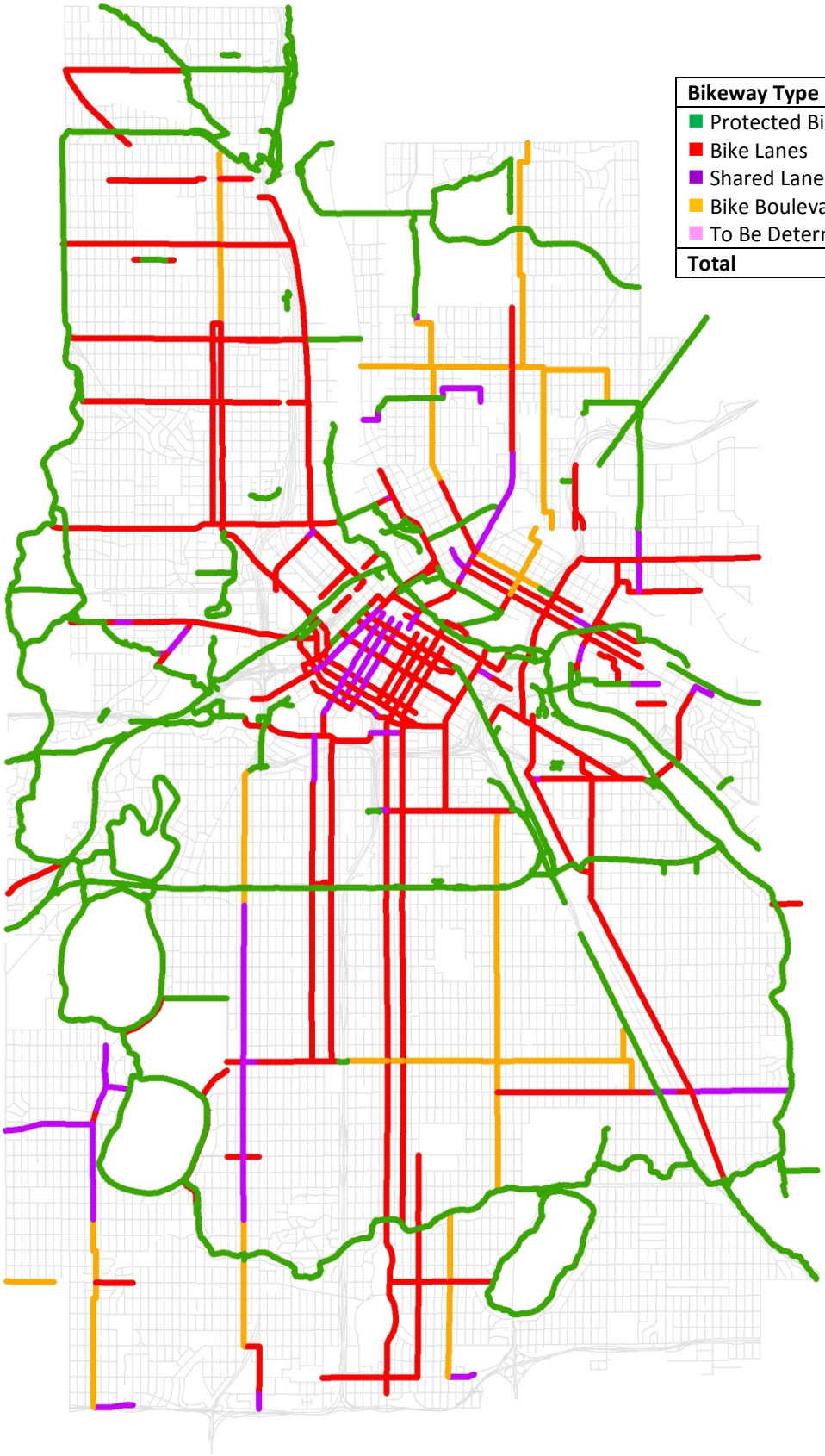
Source: Minneapolis Public Works Transportation Maintenance and Repair Division

Table 6: Estimated Annual Maintenance Costs of Plan Recommendations

Bikeway Facility Type	Cost per Foot	Cost per Mile	Tier 1		Tier 2		Tier 3		Total
			Miles	Cost	Miles	Cost	Miles	Cost	
Trail	$2.00	$10,560	6.0	$64,000	2.7	$29,000	0.2	$2,000	$95,000
One-way protected bike lane (single direction)	$6.50	$34,320	2.5	$86,000	13.7	$471,000	6.5	$222,000	$779,000
One-way protected bike lane (two directions)	$13.00	$68,640	4.0	$275,000	6.7	$457,000	2.6	$179,000	$911,000
Two-way protected bike lane on one side	$10.00	$52,800	1.1	$59,000	4.7	$247,000	2.8	$149,000	$455,000
Total			**13.6**	**$484,000**	**28**	**$1,204,000**	**12.1**	**$552,000**	**$2,240,000**

This includes all recommended protected bikeways in this plan regardless of ownership (City, County, MnDOT, MPRB) and regardless of existing capital funding status (includes both new and already-funded projects). MPRB trail projects are in Tier 1 and total 3.4 miles and an estimated $34,000 in annual maintenance costs. For cost estimating purposes, two-way protected bikeways on one side of the street are assumed for Loring Bikeway Southern Extension (4A), Grant St (7A), 5th or 6th St S (10A & 10C), Oak St SE (12A & 12 B), University Ave SE (12C), 18th Ave SE (13C), 10th/19th Ave SE (14B), Marshall/Main St NE (17A & 17B), and Broadway St NE (25).

Figure 7: Existing Bicycle Network



Bikeway Type	Mileage
Protected Bikeways	96
Bike Lanes	82
Shared Lanes	15
Bike Boulevards	20
To Be Determined	
Total	**213**

Figure 8: Existing Bicycle Network with Priority Protected Bikeways

Bikeway Type	Mileage
Protected Bikeways	142
Bike Lanes	50
Shared Lanes	13
Bike Boulevards	20
To Be Determined	6
Total	**232**

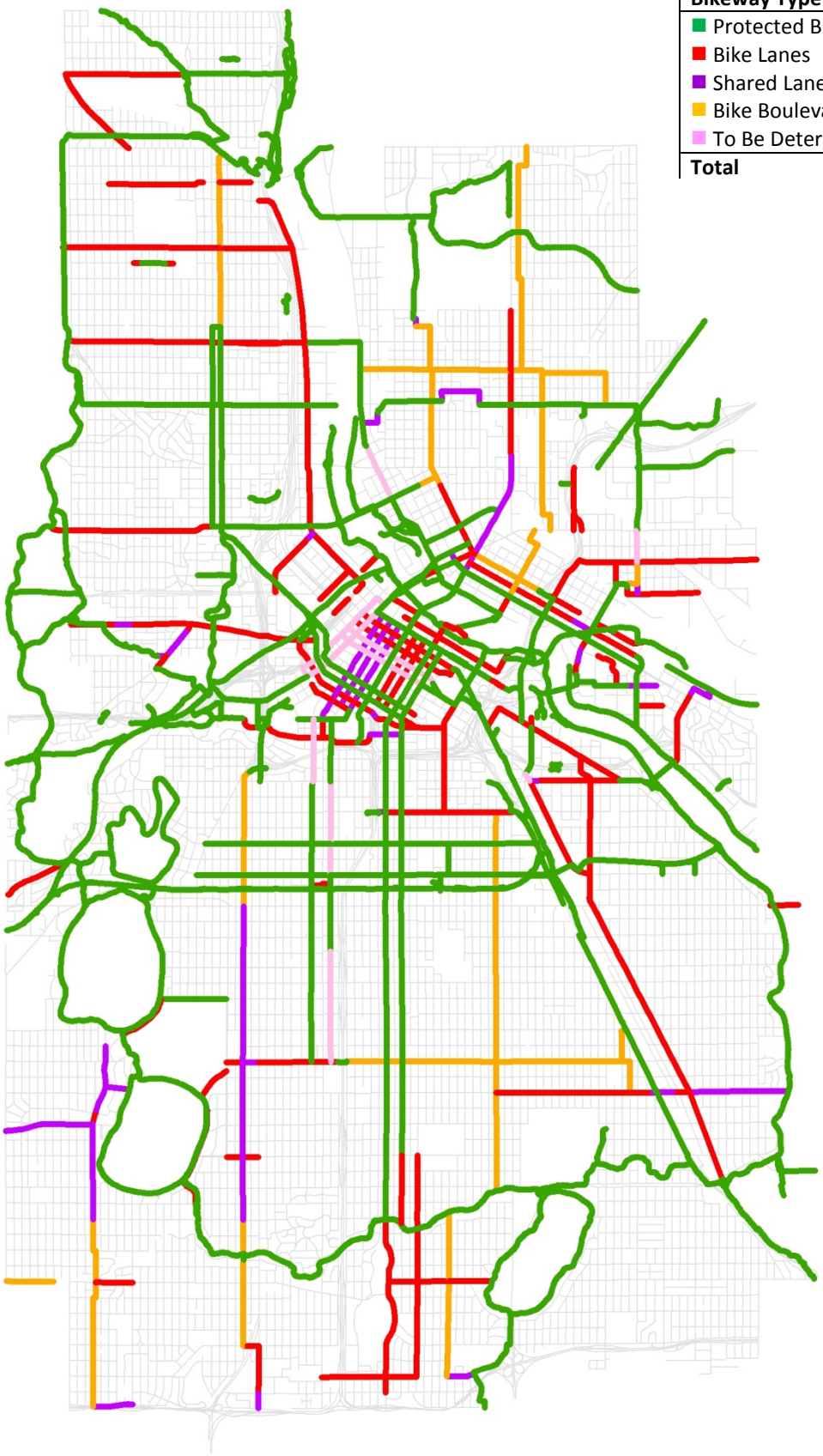
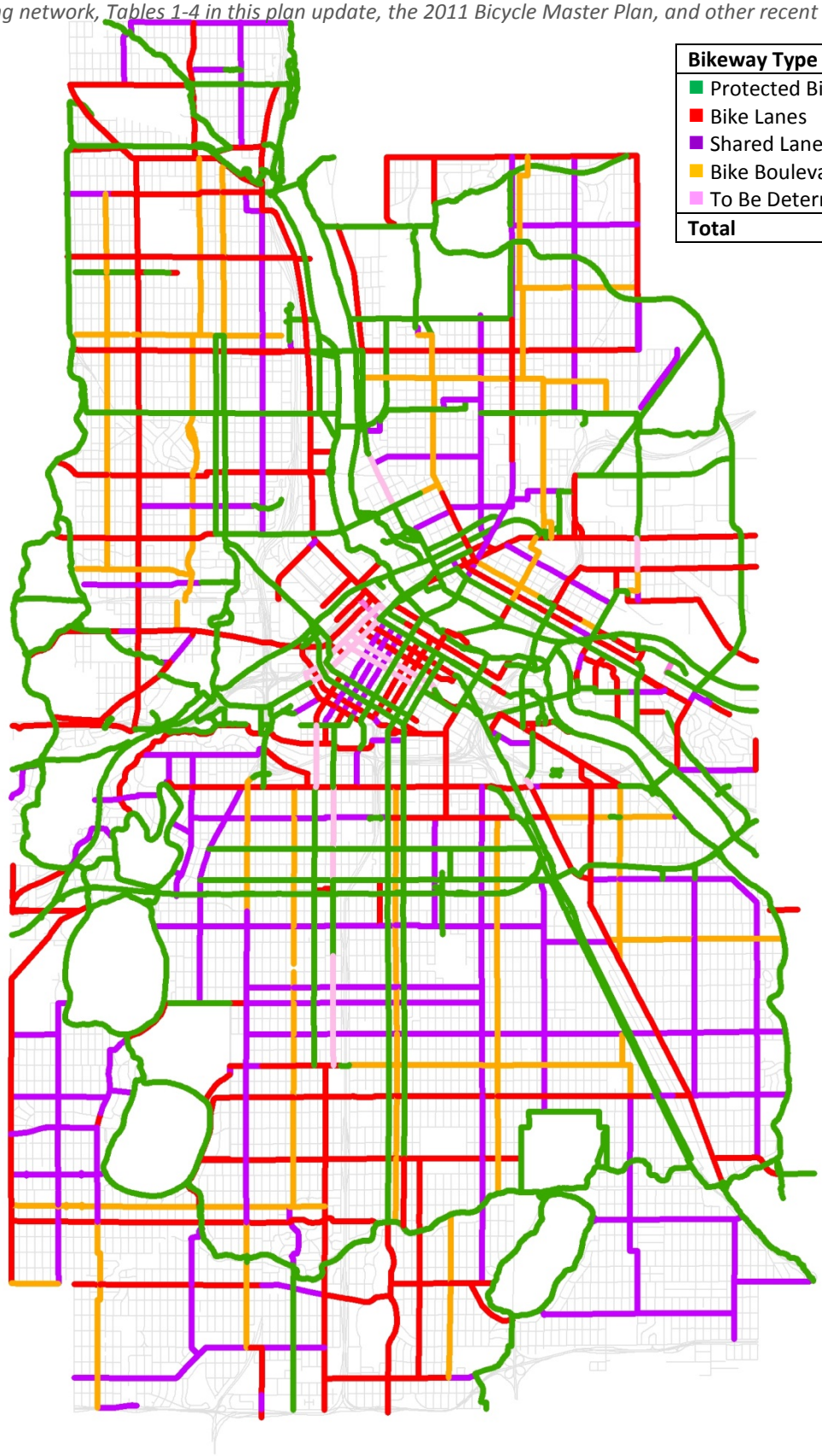


Figure 9: Planned Long-Term Bicycle Network

Based on the existing network, Tables 1-4 in this plan update, the 2011 Bicycle Master Plan, and other recent planning activities.



Bikeway Type	Mileage
Protected Bikeways	172
Bike Lanes	104
Shared Lanes	76
Bike Boulevards	44
To Be Determined	6
Total	**403**

Public Engagement Phase 1: May 2014

The first of two planned phases of public engagement for the Protected Bikeways Update to the Minneapolis Bicycle Master Plan was held in May 2014. A public open house was held at the Minneapolis Central Library on May 8; this was a joint open house with Hennepin County for the update to their Bike Plan. An online survey was also available from May 1 to May 15 for people who could not attend the open house.

Participation
70 people signed in at the open house, and 35 people completed comment forms at the open house. 135 people completed the online survey. 4 additional emails with comments from the public were received.

Community Notification
The open house and online survey were advertised via press release to many media outlets on April 25. An email advertising the public open house was sent to the City's bicycle e-gov delivery list on April 25. A second email to the City's bicycle e-gov delivery list regarding the online survey was sent on May 9. A printable flyer advertising the open house was distributed to the Bicycle Advisory Committee on April 25. A presentation introducing the project and advertising the public open house and online survey was received and filed by the City Council's Transportation and Public Works Committee on April 29.

Open House Format
The open house was held from 4:30 to 7:30 p.m. Information on the Protected Bikeways Update was shared via a project summary hand out and information boards around the room. Attendees were invited to complete a comment form on the top 5 locations where participants think protected bikeways are needed in Minneapolis and to explain why protected bikeways are needed. Attendees were also invited to mark 2-3 locations on an aerial photograph of Minneapolis showing their top priority locations for protected bikeways and top bicycling destinations. Hennepin County shared information via boards around the room, which included some interactive activities.

Online Survey
An online survey identical to the comment form at the open house was available on www.minneapolismn.gov/bicycles from May 1 to May 15.

Feedback Received
By far the most frequently identified corridor for protected bikeways was Franklin Avenue. Many other corridors were also identified, typically streets with high traffic volumes that connect high-density neighborhoods or that cross major barriers such as the freeway, river, or other physical barrier. Respondents also commented generally on the need to address intersection safety, not just the linear corridor facility, and specifically the difficulty for bicyclists to make left turns at busy intersections.

The locations where participants identified that protected bikeways are needed are summarized in Tables 6 and 7. With the 35 open house comment forms and 135 online surveys completed, participants identified their top 5 priority locations in a total of 371 survey responses.

For more details on the first phase of public engagement and the feedback received, view the complete report at: http://www.ci.minneapolis.mn.us/www/groups/public/@publicworks/documents/webcontent/wcms1p-126253.pdf

Table 7: TOP MENTIONED LOCATIONS IN ONLINE SURVEY AND OPEN HOUSE COMMENT FORMS

SUMMARIZED LOCATION	1ST PRIORITY	2ND PRIORITY	3RD PRIORITY	4TH PRIORITY	5TH PRIORITY	TOTAL
FRANKLIN AVE/24TH ST						

ions.

Table 8: LOCATIONS IDENTIFIED IN OPEN HOUSE INTERACTIVE MAPPING EXERCISE

LOCATION	NUMBER OF TIMES IDENTIFIED BY ADDITIONAL PARTICIPANTS
Franklin Avenue (Hennepin Av to 280)	+10
18th Avenue NE	+4
3rd Avenue S (downtown)	+4
4th/University Ave SE	+4
36th St W (Lake Calhoun to Bryant)	+4
5th Street S (downtown)	+3
Lake Street	+3
11th Ave S (downtown to 44th St)	+3
Dunwoody	+2
Northside Greenway	+2
32nd Street crossing Hiawatha (Minnehaha Av to 21st Av S)	+2
15th Ave SE	+2
Marshall St NE	+1
Oak St SE	+1
27th Ave NE	
Lowry Av NE (also comment not to use Lowry - use 18th and 27th)	
Upper River Trails	
Lyndale Ave S (22nd St to Hennepin Av downtown)	
Pleasant Av S	
24th St pedestrian bridge over I-35W	
26th & 28th Street	
All river crossings between Lowry Ave and Franklin Avenue	
5th Street from Hiawatha Trail to downtown (S side of Metrodome)	
25th/26th Ave S "S" curve between Franklin and Riverside Avenues	
20th Ave S / 10th Ave S bridge / 19th Ave SE	
E Hennepin Av	
Midtown Greenway extended over the River to St Paul	
Cedar Avenue S (Franklin Avenue to Minnehaha Parkway)	
Johnson Av N (18th Av NE to 19th Ave SE)	
Plymouth Ave N/8th Ave NE (2nd St N to 5th St NE)	
Nicollet Mall	
50th St W (city limits to Pleasant Av)	
46th St (Nicollet Avenue to Longfellow Ave)	
2nd St N (Lowry Av to North Loop)	
"Greenway" from Richfield to Brooklyn Park	
29th Avenue S (Franklin Av to Minnehaha Av)	

Public Engagement Phase 2: April and May 2015

The Draft Protected Bikeway Update to the Bicycle Master Plan (pages 1–16 of this document) was made public in April 2015. During the following public comment period of April 17–May 17, the City received 126 official public comments on the draft. In addition, outside groups collected 1590 postcards from the public supporting the draft and delivered them to City staff. Together, official City comments and postcards totaled 1716 comments, 98 percent of which were supportive of the overall plan (Table 9). Of all 1716 comments, the primary reason provided for supporting the plan was safety while the most common concern was connectivity and access (Table 10).

Table 9: All Comments on Overall Draft

	Number	Percentage
Supportive of Overall Draft	1683	98.1
Negative Feedback	2	0.1
Neutral/mixed Feedback	3	0.2
No Comment on Overall Draft	28	1.6
Total	1716	100

Table 10: All Provided Reasons for Support or Concern

Supportive of Draft Because		Concerned About Draft Because	
Safety	358	Connectivity/Access	11
Health	67	Maintenance	9
Environment	43	Parking Removal	4
Bike Prioritization	26	Equity	3
Connectivity/Access	25	Travel Lane Removal	2
Equity	18	Safety	1
Maintenance	6	Funding/Cost	1
Design	3	Business	1
Traffic Calming	2	Signals/Signage	1
Funding/Cost	2		
Business	2		
Parking Removal	1		
Travel Lane Removal	1		
Signals/Signage	1		

Methodology

The complete draft was available to the public online with instructions for providing email comments. The public comment period was promoted through e-gov delivery emails, a press release, and an open house. City staff also attended various public events to promote the comment period and collect comment forms in person.

The City collected four types of comments:

2. **Hardcopy questionnaire forms** were collected at public events, including the open house. It consisted of three questions/prompts:
    - Please provide comments about the overall network of proposed Protected Bikeways.
    - Please provide comments on specific proposed corridors.
    - Are there any other considerations the City of Minneapolis should take into account?
3. **Hardcopy open-ended comment** forms were also provided at public events. This form provided a blank space for comments without prompting questions.
4. **Map annotations** on sticky notes were collected during the open house. These comments were written on sticky notes and placed on large maps of the proposed plan to provide feedback on specific locations or corridors.
5. **Email comments** were received by City staff.

In addition to official City comment efforts, member groups of Bikeways for Everyone—a collaborative campaign advocating for protected bikeways in Minneapolis—collected postcards of support for the draft plan. Postcards were signed by members of the public and often included additional comments on the draft. Both official City comments and, when provided, postcard comments were transcribed and reviewed by City staff. Comments were then evaluated based on three common types of comments:

1. Comments on the overall draft
2. Specific reasons for support or concern regarding the draft
3. Comments on specific corridors or locations identified in the draft

City Comment Results

126 official City comments were collected: 53 hardcopy questionnaire forms, 12 hardcopy open-ended comment forms, 17 sticky note map annotations, and 44 emails.

City Comments on Overall Draft

A majority of commenters were supportive of the overall draft with 93 of the total 126 (73.8%) expressing support (Table 11). Three commenters (2.4%) were neutral or expressed a mixed opinion, two (1.6%) expressed a negative opinion, and 28 (22.2%) did not comment on the overall plan.

Examples of typical comments on the overall draft:

The new overall plan looks great.
Comment 107

I am excited about the plan as proposed.
Comment 2

I support the implementation of protected bikeways.
Comment 29

Table 11: City Comments on Overall Draft

	Number	Percentage
Supportive of Overall Draft	93	73.8
Negative Feedback	2	1.6
Neutral/mixed Feedback	3	2.4
No Comment on Overall Draft	28	22.2
Total	126	100

City Comment Reasons for Support or Concern

Specific reasons for support or concern regarding either the overall draft or elements of the draft were tallied (Table 12). The five most commonly referenced reasons for support for the plan were safety (18 comments), connectivity/access (9), health (4), bike prioritization (4), and maintenance (4). The five most commonly referenced reasons for concern regarding the draft were connectivity/access (11), maintenance (6), parking removal (4), equity (3), and travel lane removal (2).

Examples of typical comments citing specific reasons for support or concern:

It is a strong and ambitious plan that will improve the accessibility and safety of biking for all Minneapolis community members.
Comment 112

[The City should] promote more bike traffic, less car traffic [resulting in] less pollution, a cleaner/safer Minneapolis.
Comment 34

Blaisdell and 1st Ave S are perfect streets for [protected bikeways], but if they don't connect to anything on their north ends, then what's the point?

Table 12: City Comments Reasons for Support or Concern

Supportive of Draft Because		Concerned About Draft Because	
Safety	18	Connectivity/Access	11
Connectivity/Access	9	Maintenance	6
Health	4	Parking Removal	4
Bike Prioritization	4	Equity	3
Maintenance	3	Travel Lane Removal	2
Design	3	Safety	1
Traffic Calming	2	Funding/Cost	1
Equity	1	Business	1
Funding/Cost	1	Signals/Signage	1
Business	1		
Parking Removal	1		
Travel Lane Removal	1		

Comment 115

City Comments on Specific Corridors

Forty-five (36%) commenters provided comments on one or more specific proposed corridors (Table 13). Of comments in reference to specific corridors, Blaisdell/1st Ave S had the most comments with ten supporters and two concerned respondents. Hennepin Ave had the second most comments with nine supporters. Park/Portland Ave S had five supporters. 3rd Ave S had the most concerned responses with eight, half of which specifically stated preference for protected bikeways on Marquette/2nd Ave S. Only two corridors—26th/28th St E and Washington Ave—received explicit votes against the implementation of a protected bikeway.

Table 13: City Comments on Specific Corridors

Corridor	Supportive	Concerned	Against
Blaisdell/1st Ave S	10	3	
Hennepin Ave	10		
Downtown	6		
Park/Portland Ave S	5		
Washington Ave	4	1	1
26th/28th St E	4	1	1
10th/19th/20th Ave	4	1	
3rd Ave S	1	8	

Of corridors requested that were not listed on the proposal, Lyndale Ave S (primarily between Downtown and the Uptown area) and Franklin Ave (especially the Franklin/Minnehaha/Cedar intersection) were the most requested with four requests each.

Postcard Comment Results

Volunteers and staff of the Minneapolis Bicycle Coalition and the Sierra Club North Star Chapter collected 1590 postcards in support of the draft as part of the Bikeways for Everyone campaign. 830 postcards included specific comments in addition to expressing their support for the overall draft.

Examples of typical postcard comments:

I get very nervous riding on the street and would ride more if there were more protected bikeways.

Comment 425

Protected bikeways encourage more people to bicycle that would not otherwise!

Comment 803

I believe that increasing access to safe and comfortable bike lanes is key to our communities' health and longevity.

Comment 338

Biking is the most equitable way for all citizens to get to their work + home.

Comment 149

Table 14: Postcard Provided Reasons for Support or Concern

Supportive of Draft Because		Concerned About Draft Because	
Safety	340	Maintenance	3
Health	63		
Environment	43		
Bike Prioritization	22		
Equity	17		
Connectivity/Access	16		
Maintenance	3		
Funding/Cost	1		
Business	1		
Signals/Signage	1		

Postcard Comment Reasons for Support or Concern

Of the postcards that provided comments, the five most commonly referenced reasons for supporting the overall draft or elements of the draft were safety (341), health (63), environment (42), bike prioritization (22), and equity (17) (Table 14). The only referenced reason for concern regarding

the draft was maintenance (3).

Postcard Comments on Specific Corridors

All comments in reference to specific corridors were supportive. Five people showed support for protected bikeways in downtown, two on 15th St SE, and one each for Broadway Ave NE, Washington Ave, and 26th/28th St E.